

Obese adolescent with gait and depression - case report

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SCHOOL OF MEDICINE

INTRODUCTION

Hypercalcaemia is an uncommon electrolyte disorder in children. It could be discovered incidentally based on routine blood chemistry results.

HISTORY

Main complaints

Obesity

- His weight had been gradually increasing over the previous two years, up to BMI of 31.5 kg/m²

Gait

- The pain in his legs started a year ago, but worsened progressively and in the months prior to admission, the patient could not walk without the aid of crutches

Depression

- He was on antidepressant therapy due to adjustment disorder

History

- BW 4000g, BL 56cm
- Formula fed, cow milk introduced at 3 months
- Development normal
- Nutrition: juice, junk food
- No physical activity

Family history

Mother:

- Severe obesity, 140 kg, 178 cm, BMI 44.2 kg/m²
- Type 2 Diabetes, Hypertension

Clinical examination

- A 14-year-old adolescent, Height 167.4 cm (-0.45 SDS),
- Weight 91.5 kg (+2.18 SDS), BMI 32.7 kg/m² (+2.57 SDS)

RESULTS

oGTT

Time (min)	0	30	60	90	120
Glucose (mmol/L)	4.9	9.4	8.5	8.8	8.7
Insulin (μU/L)	35.6	330.4	286.4	367.4	409.8

Biochemistry		Normal values
Cholesterol (mmol/L)	5.46	3.2-6.2
Triglycerides (mmol/L)	2.9	0.8-2.0
HDL (mmol/L)	0.84	1.04-1.55
LDL (mmol/L)	3.4	2.6-4.1
GPT (U/L)	71	< 59
GOT (U/L)	42	< 36
HbA1c (%)	5.3	4.8-6.0

oGTT showed impaired glucose tolerance, but incidental finding was hypercalcemia.

RESULTS

Biochemistry		Normal values
Calcium (mmol/L)	3.54 ↑	2.02 – 2.60
Phosphate (mmol/L)	0.92 ↓	1.0 – 2.0
Alkaline phosphatase (U/L)	982 ↑	< 618
Ca/Cr urine	0.3	< 0.2
iPTH (ng/L)	640 ↑	10 – 80
Vitamin 25-OH D (nmol/L)	73.8	75-250

INVESTIGATIONS

- Familial hyperparathyroidism ruled out
- Neck ultrasound did not show any abnormalities
- Technetium-99m sestamibi scintigraphy:
Right-sided parathyroid adenoma

THERAPY

- Minimally invasive **parathyroidectomy**
- A decrease in PTH levels (from 640.7 to 6.55 pg/mL)
- Seven days after surgery, biochemical test results indicated hungry bone syndrome (serum calcium level 1.9 mmol/L, serum phosphate level 1.0 mmol/L).

FOLLOW UP

- After 4 weeks calcium supplementation therapy and antidepressants were stopped.
- One year after surgery, he walks normally, no signs of depression and calcium levels are normal. The remaining problem is his struggle to lose weight, his BMI is 34.8 kg/m².

CONCLUSIONS

Hyperparathyroidism is rare in children, but we have to consider measurement of calcium in a child with pain in legs and mood changes.